

Amendments to the Claims:

1. (Currently Amended) A magnetic resonance apparatus comprising:
5 a magnet assembly for generating a main magnetic field through a subject disposed in an examination region, the magnet being disposed in a magnetic resonance suite;
gradient magnetic field means for generating gradient magnetic field pulses across the examination region;
10 an RF transmitter means for generating RF resonance excitation and manipulation pulses;
a sequence control system for generating magnetic resonance sequences control signals for controlling the gradient magnetic field means and the RF transmitter means;
15 an RF coil which at least receives resonance signals from the examination region, the RF coil being disposed adjacent the examination region;
an image processing system which processes the resonance signals received by the RF coil into images and manipulates the reconstructed images;
20 a wireless interface disposed with an antennae in the magnetic resonance suite for wireless communication between of at least one of (i) at least one of the sequence control systems and the image processing system signals from the sequence control system to the gradient field means and the RF transmitter means and (ii) at least one of the resonance signals from the RF coil and a wireless remote control unit for communicating between an operator and at least one of the sequence control system and to the image processing system.
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2. (Currently Amended) A The magnetic resonance apparatus as set forth in claim 1, wherein comprising:
5 a magnet assembly for generating a main magnetic field through a subject disposed in an examination region, the magnet being disposed in a magnetic resonance suite;
a sequence control system for generating magnetic resonance sequences;

10 an RF coil which at least receives resonance signals from the examination region, the RF coil being disposed adjacent the examination region;

15 an image processing system which processes the resonance signals received by the RF coil into images and manipulates the reconstructed images;

20 a wireless interface disposed with an antennae in the magnetic resonance suite for wireless communication between a handheld wireless remote control unit and at least one of the sequence control system and the image processing system;

25 the handheld wireless remote control unit includes including:

30 an image display for relaying displaying images and information from at least one of the sequence control system and the image processing system to the an operator;

35 an RF receiver for receiving RF signals via the wireless interface from at least one of the sequence control system and the image processing system which carry the images and information for display on the image display;

40 an input portion for accepting requests from the operator;

45 an RF transmitter for transmitting the operator requests to by the wireless interface to at least one of the sequence control system and the image processing system.

3. (Currently Amended) A The magnetic resonance apparatus as set forth in claim 2, wherein comprising:

5 a magnet assembly for generating a main magnetic field through a subject disposed in an examination region, the magnet being disposed in a magnetic resonance suite;

10 a sequence control system for generating magnetic resonance sequences;

15 an RF coil which at least receives resonance signals from the examination region, the RF coil being disposed adjacent the examination region;

an image processing system which processes the resonance signals received by the RF coil into images and manipulates the reconstructed images;

15 a wireless interface disposed with an antennae in the magnetic resonance suite for wireless communication between (i) at least one of the sequence control systems and the image processing system and (ii) a wireless remote control unit for communicating information to an operator from at least one of the sequence control system and the image processing system, the
20 wireless remote control unit further includes including:

a radio frequency receiver for receiving radio frequency signals from at least the wireless interface.

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4. (Original) The magnetic resonance apparatus as set forth in claim 3, further including:

a microprocessor for processing operator input to the remote control unit.

5 5. (Currently Amended) The magnetic resonance apparatus as set forth in claim [[1]] 2, wherein the wireless interface and the at least one of the remote control unit and the RF coil communicate with carrier frequencies greater than 500 MHZ.

6. (Currently Amended) The magnetic resonance apparatus as set forth in claim 5, wherein the carrier frequencies are between 2.3 and 2.6 GHz.

7. (Currently Amended) The magnetic resonance apparatus as set forth in claim 1, further including:

5 an RF transmitter disposed adjacent the RF coil;
a radio frequency transceiver connected with the transmitter for communicating between the resonance signals the RF transmitter and via the wireless interface to the image processing system.

8. (Currently Amended) A ~~the~~ magnetic resonance apparatus ~~as set forth in claim 1, further including:~~

5 ~~a magnet assembly for generating a main magnetic field through a subject disposed in an examination region, the magnet being disposed in a magnetic resonance suite;~~

10 ~~a sequence control system for generating magnetic resonance sequences;~~

15 ~~an RF coil which at least receives resonance signals from the examination region, the RF coil being disposed adjacent the examination region;~~

20 ~~an image processing system disposed outside the magnetic resonance suite which processes the resonance signals received by the RF coil into images and manipulates the reconstructed images;~~

25 ~~an RF transmitter disposed inside the magnetic resonance suite for transmitting resonance signals from inside the magnetic resonance suite to the image processing system;~~

30 ~~additional radio frequency transceivers for providing a wireless communication pathway between a radio frequency transmitter and from the RF coil to the RF transmitter.~~

9. (Currently Amended) A method of magnetic resonance imaging comprising:

inducing a main magnetic field through a subject in an imaging region in an MR scanner disposed in an MR suite;

5 exciting and manipulating magnetic dipoles within the imaging region;

receiving and demodulating magnetic resonance signals;

10 with an image processor, reconstructing the demodulated received resonance signals into an image representation of the patient in the imaging region; and

15 wirelessly communicating at least one of
(i) resonance exciting and manipulating instructions from outside the MR suite to the MR scanner and [[,]] received resonance signals, and from the scanner to the image processor processing instructions with radio frequency signals.

10. (Original) The method as set forth in claim 9 further including:

5 identifying an RF coil with which the magnetic resonance signals are received using a radio frequency communicated handshaking protocol.

11. (Original) The method as set forth in claim 9, wherein the radio frequencies are greater than 500 MHZ.

12. (Original) The method as set forth in claim 9, further including:

wirelessly communicating and displaying information pertinent to a current magnetic resonance scan on a remote unit.

13. (Original) The method as set forth in claim 12, further including:

receiving reconstructed image information with the remote unit;

5 displaying the received image information on the remote unit.

14. (Currently Amended) ~~A~~ The method as set forth in claim 9 further including of magnetic resonance comprising:

inducing a main magnetic field through a subject in an imaging region;

5 exciting and manipulating magnetic dipoles within the imaging region;

receiving magnetic resonance signals with an RF coil which is removably mounted adjacent the imaging region to receive resonance signals emanating from the subject;

10 wirelessly communicating an identification of an RF receiving coil which is mounted adjacent the imaging region to receive resonance signals emanating from the subject; and

reconstructing the resonance signals into an image representation of the patient in the imaging region.

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15. (Currently Amended) A hand-held remote interface unit for use in conjunction with a diagnostic imaging apparatus comprising:

5 ~~a communicating means for communicating information to an operator;~~

a receiving means that wirelessly receives the information to be displayed to an operator;

10 ~~a display means that displays the received information to the operator;~~

15 ~~an input means that facilitates operator instructions are entered;~~

~~a wireless communication means for wirelessly communicating the entered operator instructions to sequence control and image processing systems[[:]]~~

15 ~~a display means that displays the received information communicated to the operator.~~

16. (Currently Amended) The remote interface unit as set forth in claim 15, wherein the input means includes at least one of:

5 a keyboard;

a touch screen; and,

a voice recognition device.

17. (Currently Amended) In a magnetic resonance imaging system which includes a shielded imaging suite, a magnet which generates a primary magnetic field through an imaging region located in the imaging suite, RF and gradient coils disposed adjacent the imaging region in the imaging suite, a sequence control system, and an image processing system, the sequence control signal communicating magnetic resonance sequence instructions to the RF and gradient coils, magnetic resonance signals received by the RF coils being communicated

10 to the image processing system, the improvement comprising:

communicating the magnetic resonance sequence instructions and the received magnetic resonance signals within the magnetic resonance suite over radio frequency communications signals.

18. (Cancelled)

19. (Original) In the magnetic resonance imaging system as set forth in claim 17, wherein the radio frequency communicating includes:

5 communicating control signals from a hand held controller in the imaging suite to at least one of the sequence control system and the image processing system.

20. (Original) In the magnetic resonance imaging system as set forth in claim 17 wherein the communications are digitally encoded on the radio frequency communication signals.

21. (Original) In the magnetic resonance imaging system as set forth in claim 17 wherein the radio frequency communication signals have a frequency greater than 0.5 GHz.

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